Face Value

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Abstract:

There is growing evidence of systematic heterogeneity in behavior by observable characteristics, such as what one would see in a face. We ask, is there informational value in knowing these characteristics in a strategic interaction? Subjects are given the opportunity to purchase a photograph of their partner in the play of a trust game. Not everyone purchases the photo, even at prices as low as $0.20. Senders (first movers in the game) have a more inelastic demand for pictures than responders (second movers). White senders have a substantially higher demand than nonwhite senders or responders. For responders, there is no difference in demand for pictures across ethnicity or sex. White senders who pay to see the picture of their partner use the information to discriminate, sending significantly less to black responders than to white responders. Overall, responders return a higher percentage of the amount received as offers go up, but they do differentiate that percentage when they see the picture of the sender, returning more to a member of the same ethnicity. A face, it appears, has strategic value, especially for those who will use the information to differentiate their decisions.

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Introduction

Systematic heterogeneity in behavior can occur because people differ from each other, as when women and men are shown to behave differently, or because people treat each other differently, as when minorities are treated differently from whites. Recent research illustrates the second source of heterogeneity by demonstrating that, when subjects are shown photos of their counterparts, their decisions are affected by what they observe, such as ethnicity, sex, and attractiveness.[1] If a photograph contains valuable information, a person can use that information to differentiate behavior. The fact that decisions vary based on the information in a photograph indicates that subjects believe the information to be valuable. We conduct experiments to test whether subjects are willing to pay for the information they infer from photos, and if that information is worth its price. We ask, what is the informational value of a photo? And, how do decisions change with that information?

We use a trust game similar to that of Berg, Dickhaut and McCabe (1985) to explore these questions. The game is ideal because it allows us to see the differential value of a photo in a game of strategic play. In the game, a sender is paired with a responder, and both are endowed with M tokens. The sender can send any number of tokens between 0 and M tokens to the responder. Any amount sent is tripled, and the responder can return to the sender any amount between zero and the tripled amount received. While the responder makes his decision knowing the amount sent, the sender must decide how much to send without knowing how much will be returned. The sender must form some expectation about how much the responder will return. A player on one side of the interaction has to make a decision that is more strategic than the other. Information should be more valuable to the more strategic player – the first mover. This allows us to explore the effect of strategic value on the willingness to purchase information in the form of a counterpart's photograph and the effect of a photo on decisions.

The innovation in our experiments is that, before making decisions in the trust game, a subject is allowed to purchase the picture of a partner for a predetermined price. If the picture is purchased, the partner's picture is displayed when the subject makes a decision in the subsequent trust game with that counterpart. If the picture is not purchased, the partner's identity is kept confidential. This set-up allows us to estimate the demand for photos, quantify their value, and explore their effect on decisions. Our data give the first empirical support for the value of a photo and the differential desire to acquire this information. That people are willing to pay for this information and use it strategically suggests that theory in such environments needs to take this into account.

Our interest is to investigate the informational value of a photograph in a trust game. Previous research has shown that people are willing to pay for payoff-relevant information. In a public goods game, Kurzban and Descoli (2008) show that subjects are willing to purchase information on previous-round behavior at a small fixed cost, and they use that information to adjust contributions. While information may hold value for payoffs, it may not be completely irrational to observe individuals forgoing information in order to remain ignorant. There is a growing

[1] For recent examples, see Andreoni and Petrie (2008), Andreoni and Petrie (2004), Burns (2005), Habyarimana, et al. (2007), Mobius and Rosenblat (2006), Petrie (2004), Solnick and Schweitzer (1999), and Wilson and Eckel (2006, 2007). Brosig, Ockenfels and Weimann (2003) and Greiner, Guth and Zultan (2005) use video instead of photos.

theoretical literature that suggests that people with time-inconsistent preferences may prefer to avoid information-gathering to remain optimistic or delay costs (Carrillo and Mariotti, 2000; Amador, Werning and Angeletos, 2006; Brocas and Carrillo, 2004; Lagerlof, 2004). Also, there is experimental evidence that, given the self-serving opportunity to remain ignorant or hide one's decisions behind bad luck, people take that option (Dana, Weber and Kuang, 2007; Dana, Cain and Dawes, 2006; Castillo and Leo, 2007).

Several experimental studies show that knowing something about the characteristics of one's partner may have informational value. This holds for knowing the social context and specific characteristics, such as sex, beauty and ethnicity.[2] Also, experimental evidence shows that strategic behavior is related to the sex of the decision maker and her counterpart.[3] Specific to trust games, several studies have shown that both sex and ethnicity can affect decisions. The many studies that test for gender differences in trust the lab are surveyed in Garbarino and Slonim (2007). For example, Buchan, Croson and Solnick (2006) find that men trust more than women, and women are more trustworthy than men. Petrie (2004) finds that black men are the least trusting of all groups, and people treat them as such. Burns (2005) and Wilson and Eckel (2007) find that skin color is related to trust and reciprocity: darker skinned players trust less and are less likely to be trusted, though they are no less trustworthy. Haile, Sadrieh and Verbon (2006) find that income differences in South Africa, rather than race, explain trust behavior. These studies suggest that knowledge of gender, ethnicity and other factors may be valuable in a trust context.

In our experiments, as in previous research, we find important differentiation in trust decisions by sex and ethnicity. We also are able to explore some of the underlying reasons why this might be the case. Given the opportunity to buy the photograph of a partner, both senders and responders do so. Senders, however, spend more money on buying photos than responders and they have a more inelastic demand for photos. White senders have the highest demand for photos. The value of seeing the photo appears to be mainly strategic. Indeed, if behavior is correlated with personal characteristics, then seeing the photo should be helpful in forming expectations about behavior. We would expect senders to be more likely to buy photos and use that information to differentiate their trust.

Subjects that purchase photos tend to differentiate their decisions based on the ethnicity of their partner. White senders send less to black responders, but black senders do not differentiate the amount sent. This may be due to different expectations about the behavior of responders or an in-group/out-group effect. On the responder side, both black and white responders tend to favor partners of the same ethnicity and return a higher percentage to them relative to partners of another ethnicity.

[2] For the interaction of social context and outcomes, see Andreoni and Petrie (2004), Bohnet and Frey (1999a, 1999b), and Burnham (2003). For specific characteristics of a partner, such as sex, beauty and ethnicity, see Andreoni and Petrie (2008), Castillo and Carter (2006), Castillo and Petrie (2007), Cox and Deck (2006), Ferraro and Cummings (2007), Hammermesh and Biddle (1994), Mobius and Rosenblat (2006), and Wilson and Eckel (2006, 2007).

[3] See Croson and Gneezy (2008), Eckel and Grossman (1998, 2001, 2008), Gneezy, Niederle, and Rustichini (2003), Niederle and Vesterlund (2007).

These results suggest that the informational value of a face is non-zero. In the realm of strategic decisions, seeing the photograph of one's partner may provide information to help form expectations about behavior. It appears that this information is may be more valuable to some groups than to others.

Experiment

Subjects are given the opportunity to purchase a picture of their partners before making decisions in a trust game. The instructions for the trust game are read first. In the trust game, both the first mover, the sender, and the second mover, the responder, are endowed with 10 tokens. Each token is worth $1.50. The sender can send any number of tokens, from zero to ten, to the responder. Each token sent to the responder is tripled. The responder can return any number of tokens, from zero to the tripled amount, back to the sender. Subjects are paired with six different partners and make their decisions simultaneously and without feedback.

Each subject makes six decisions with six different partners, each on a separate screen on a computer. The subject can easily click back and forth through the screens to make decisions. The sender decides how many tokens to send to the responder by moving a slide bar on each decision screen. The computer clearly indicates how many tokens the sender would keep and how many tripled tokens the responder receives. The responder makes decisions using the strategy method, deciding how many tokens to send back to the sender for every possible number of tokens received. Decisions are made using slider bars that represents the tripled amount received for each possible choice that the sender could make. These choices are made on successive screens for each sender the responder is matched with. Each subject submits his decisions without knowing what his partner decided to do. One of the six decisions is chosen at random for payment, and subjects know this ahead of time. Subjects are randomly assigned one role, know their role before making any decisions and keep the same role for the entire experiment.

Each subject has his photo taken at the beginning of the experimental session. The photo is taken with a digital camera and is taken from the shoulders up so that the subject's face is visible but nothing else. The photo is similar to a passport or identification photo. After the trust-game instructions but before making the trust decisions, subjects are asked if they are willing to give up a fixed amount of money and see the photo of the person they are paired with for that decision. The money the subject gives up is the price the subject pays for the seeing the photo. For each partner that a subject is paired with, the subject sees a different price. The price attached to each partner is randomly assigned, and subjects know this ahead of time. Subjects must decide if they will take the money and not see the photo of their partner, or forego the money and see the photo of their partner. In three sessions, prices were {$.50, $1, $2, $3, $4, $5}, and in one session, prices were more extreme {$.20, $.50, $1, $2, $5, $8}. Both senders and responders see the exact same prices. Once everyone decides which, if any, photos they wish to see, subjects then make their trust decisions while observing the photos they purchased.

If a subject decides to pay the price to see the photo of one of his partners, the photo is displayed on the top of the trust decision screen for the decision with that partner. Suppose a subject decides to pay $0.50 to see a partner, $1.00 to see another partner and $2.00 to see another

partner. He decides not to pay the higher prices required to see any of the other three partners. Then, on the decision screen for each partner whose photo he purchased, the subject sees the partner's photo. On the decision screen for each partner whose photo he did not purchase, the subject does not see the partner's photo. So, of the subject's six partners, the subject sees three of the six partners' photos. The subject's partner does not know if the subject bought his photo or not. For whichever decision is randomly chosen for payment, if the subject decided not to see the photo, then in addition to the money earned from the trust decision, the subject also receives the photo money for that decision. If the subject decided to see the photo, he receives no extra money.

A total of 84 subjects participated in four experimental sessions with either 20 or 22 subjects. All sessions were conducted at the Experimental Economics Center (EXCEN) laboratory at Georgia State University.[4] Subjects were recruited from introductory courses in economics, political science, sociology, biology and chemistry. Subjects were also recruited through flyers posted on campus and through ads in the campus newspaper. Each experimental session took about one hour and a half. Average total subject earnings are $30.48 (standard deviation $10.70).

Of the subjects in the experiments, 38.1% of subjects are men. Each subject was asked his ethnicity. Of all subjects, 54.8% are self-described as Black or African American, 26.2% are Caucasian or White, 19% are Other (including Arab, 1.2%, Asian, 3.6% Hispanic, 8.3%, Indian, 3.6%, Pakistani, 2.4%).[5] We focus on the behavior of Whites and Blacks and group all other ethnicities together.

Demand for Pictures

We first examine the demand for pictures. Given the opportunity, do people purchase the photograph of their partner? Table 1 shows the percent of subjects who purchase a photo by the price of the photo. Even at very low prices, not everyone purchases the photo. For example, even at the lowest price, $0.20, only 50% of subjects purchase.[6] As the price of the picture goes up, the percent of subjects purchasing photos declines as expected.

Looking at senders and responders separately, the percent of subjects purchasing the photo is slightly higher for senders, and the tails of the distribution are different. At the lowest price, there are more responders than senders who purchase, and at the highest price, $8.00, only senders are willing to pay to buy a picture. However, both a binomial proportions test and a chi-square test for difference in distribution shows these differences are not significant (p-values = 0.476 and 0.514, respectively).

[4] Georgia State University is a racially diverse urban campus in downtown Atlanta.
[5] The distribution across race and sex in the experiment is slightly more biased towards black subjects compared to the university population. Approximately, 37% of the undergraduate student body is White, 31% is Black, 10% is Asian, 6% is Hispanic, 10% did not report their race, and 6% fall in miscellaneous categories.
[6] Since estimating the demand for a good does not require observing demand at prices of zero, we opted not to offer the picture for free. We consider the prices of $0.20 and $0.50 low enough compared to average earnings ($30.48) to be close to a price of zero.

Senders pay more on average for pictures than responders. Totaling up what senders and receivers pay to see the picture of their partners, senders pay on average $2.01 (std dev $4.65) and responders pay on average $1.11 (std dev $2.76). While senders are paying on average $0.90 more than responders (almost twice as much), the difference is not significant.[7]

Table 1: Percent of subjects who purchase a photo, by price of the photo.* (fraction in parentheses)

Price	Total	Sender	Responder
$.20	50.0 (10/20)	40.0 (4/10)	60.0 (6/10)
$.50	38.1 (32/84)	35.7 (15/42)	40.5 (17/42)
$1.00	23.8 (20/84)	21.4 (9/42)	26.2 (11/42)
$2.00	14.3 (12/84)	21.4 (9/42)	7.1 (3/42)
$3.00	7.8 (5/64)	9.4 (3/32)	6.2 (2/32)
$4.00	6.2 (4/64)	9.4 (3/32)	3.1 (1/32)
$5.00	7.1 (6/84)	9.5 (4/42)	6.2 (2/32)
$8.00	5.0 (1/20)	10.0 (1/10)	0.0 (0/10)
All	21.4 (90/420)	22.9 (48/210)	20.0 (42/210)

*Prices for sessions 1-3 were $.50, $1, $2, $3, $4, $5; for Session 4, they were $.20, $.50, $1, $2, $5, and $8.

We would like to know how the demand for buying the picture of one's partner varies by sex, ethnicity and role of the subject. Table 2 shows a random-effects linear probability model of buying a picture as a function of the price of the picture, sex, ethnicity, role the subject was assigned and interaction terms.[8]

Demand for pictures is downward sloping, and senders have a more inelastic demand than responders. The former is reassuring and suggests that pictures are a normal good. The latter is expected since the sender's decision is more strategic than the responder's. Because the responder gives a conditional response, there is no uncertainty about the outcome after the sender chooses how much to send. The sender, however, must decide how much to send given an expectation about what the responder will choose.

[7] A one-tail t-test has a p-value of 0.143, and a two-tail test has a p-value of 0.287. The p-value for a rank-sum test for difference in means is 0.713.

[8] These results also hold if we run the regression as OLS with clustered errors and as a Logit with random effects. We report the results from the random-effects linear probability regression for ease of exposition.

There is no difference in demand between men and women, but white senders have a higher demand for pictures than any other group. At any price, a white sender would be 40% more likely to buy a picture than any other sender.[9]

Table 2: Probability of Buying a Picture
Individual-Level Random Effects Regression

	Probability of Buying
Price	-0.066 (0.000)
Male	0.061 (0.533)
Black	-0.005 (0.967)
White	-0.139 (0.309)
Sender	-0.196 (0.214)
Sender*Price	0.022 (0.071)
Sender*Male	-0.072 (0.587)
Sender*Black	0.166 (0.318)
Sender*White	0.384 (0.039)
Constant	0.365 (0.003)
N	504
R^2 – overall	0.12
Individual Random Effects	*Yes*

*p-values in parentheses.

It could be that senders, and especially white senders, may have responded this way because of the composition of the experimental session. Recall that a subject knew that he would be partnered with someone else in the room. So, the probability of purchasing a photo may also be affected by the likelihood of encountering a partner of a certain characteristic.[10] If we add session-level variables describing the composition of the room, such as percent of men, percent of Whites, percent of Blacks, senders still have a more inelastic demand and white senders have a higher demand. So, the composition of the room does not appear to be an explanation.

An alternative explanation is that because white subjects were always a minority in all sessions (there were always more black subjects than white), they would be more likely to want to identify others to see if their partner is in their own group or in an out group. The behavior of white subjects is also consistent with unfamiliarity with other groups. Because Whites are the majority in society, they may be less likely to interact with minority groups, whereas minority groups are more likely to interact with majority groups. Majority group members are more likely to be teachers in school or bosses in the workplace. Majority groups may be more interested in finding out who they are paired with because of this unfamiliarity. We turn next to behavior of senders to see if behavior changes conditional on viewing the photo.

[9] This result also holds if we further disaggregate the ethnicity data into Blacks, Whites, Hispanics, and Others. Castillo and Petrie (2007) also found that information is more valuable for Whites than any other group.
[10] Subjects made their decisions at a computer with privacy dividers, but they saw one another as they entered the lab and as photographs were taken.

Amount sent

We have seen that senders are more likely to purchase a photo of their partners. We would also like to know how the amount sent to the responder varied by the characteristics of the responder. Table 3 shows the average amount sent by a sender to a responder when the responder's ethnicity or sex is known and when it is unknown.

Table 3: Average Number of Tokens Sent by Sender and Responder Ethnicity and Sex

	Responder				
Sender	Black	White	Other	Unknown	N
Black	1.5 (15)	3.1 (10)	2.5 (4)	1.9 (109)	138
White	3.6 (10)	5.5 (6)	.	4.1 (38)	54
Other	4 (2)	.	3 (1)	3.8 (57)	60
	Male	Female		Unknown	N
Male	3.9 (10)	3.8 (8)		2.8 (84)	102
Female	2.5 (11)	2.5 (19)		2.9 (120)	150

* Number of observations in parentheses

The top section of Table 3 shows the amount sent by the ethnicity of the sender and the responder. On average, Whites send 3.6 tokens to a known black responder and 5.5 tokens to a known white responder. This difference is significant using a Wilcoxon Rank Sum test (p-value = 0.083). Whites do not send significantly more or less on average to unknown partners than to known white or black partners. Blacks send 1.5 tokens on average to a known black responder and 3.1 tokens to a known white responder. These differences are not significant (p-value = 0.118). Other ethnic groups do not distinguish amounts sent.

The bottom section of Table 3 shows amount sent by sex of the sender and the responder. Men send on average 3.8 tokens to known partners, and women send 2.5 tokens to known partners. Neither men nor women significantly differentiate the amount sent to men or women.

Do the results in Table 3 hold up when controlling for both ethnicity and sex? Table 4 shows individual-level random effects regression results for the amount sent by senders controlling for the ethnicity and sex of the sender, the ethnicity of the pairing and session fixed effects.[11] The omitted pairing category is when the partner's picture is not shown or when the partner's picture is shown and the partner is not Black or White. The same results hold if pairing dummies are included such that the only omitted category is unknown partners. As the raw averages in Table 3 indicate, white senders send significantly less to known black responders. Comparing the coefficients in the regression in Table 4, they send 1.83 tokens less to a black than to a white responder. Black senders also send more to known white responders compared to known black responders, but this difference is not significant. The only other significant effect is that Blacks send 1.5 tokens less on average.

[11] These results also hold if we run the regression as a random-effects Tobit.

Table 4: Amount Sent
Individual-Level Random Effects Regressions

	Amount Sent
Male Sender	0.423 (0.540)
Black Sender	-1.542 (0.081)
White Sender	0.907 (0.401)
Black Sender-Black Responder	0.168 (0.754)
Black Sender-White Responder	0.665 (0.210)
White Sender-White Responder	0.438 (0.650)
White Sender-Black Responder	-1.392 (0.091)
Constant	4.341 (0.000)
N	252
R^2 – overall	0.24
Individual Random Effects	*Yes*
Session Fixed Effects	*Yes*

*p-values in parentheses.

These results also hold if we include dummy variables for the pairings by sex of the sender and the responder. Whites still send significantly less to known black partners, and the effect is a little stronger. In addition, as the raw averages in Table 3 suggest, men send 1.3 tokens more to their known partners, be they men or women, relative to unknown partners and to female senders. Only in male-male pairings, however, is this difference significant.

It appears that not only do white senders have a higher demand for seeing who they are paired with, but they also use that information to significantly differentiate the amount sent to white and black responders. This might be due to different expectations about the behavior of responders. For instance, white subjects might anticipate that the percent returned might differ depending on the race of the responder. Black subjects also seem to anticipate this, but the difference in the regression is not significant.

Behavior by black and white subjects also differs in overall variability, with whites engaging in more differentiation than blacks. On average, black subjects send less, whether or not they see their partner.[12] They also have a lower variance in behavior than white subjects. If there is little differentiation in trust behavior in general, then we should not expect to see any differentiation when the partner is seen. Also, there is little reason for black subjects to purchase photographs. We turn next to the behavior of responders for some clues.

[12] One explanation for why Blacks send less might come from sociological theories of racial differences in group positioning. For example, Bobo and Hutchings (1996) find that Blacks and Latinos are more likely to see other groups as competitive threats for scarce resources, whereas Whites are less likely to hold such views. The sender in the Trust game has to trust that responders will share the invested pie. This could be viewed as competition over scarce resources.

Percent returned

How does the percent returned by responders, conditional on amount sent, vary with the characteristics of the sender? Table 5 shows how responders react to the amount sent. We define a response function as the percent returned for each amount sent by the sender. In Table 5, we also control for the responder's characteristics and the sender's characteristics. The dependent variable is the percent returned of the tripled amount sent. We include dummy variables for the type of pairing by ethnicity and interaction terms with amount sent.

Table 5: Percent Returned by Responders
Individual-Level Random Effects Regression

	Percent Returned
Amount sent	0.821 (0.000)
Male Responder	1.481 (0.809)
Black Responder	3.392 (0.670)
White Responder	-6.776 (0.433)
Black Responder-Black Sender	9.205 (0.000)
Black Responder-White Sender	13.971 (0.000)
White Responder-White Sender	6.257 (0.277)
White Responder-Black Sender	8.424 (0.027)
Male Responder*amount sent	0.962 (0.000)
Black Responder*amount sent	-1.102 (0.000)
White Responder*amount sent	-0.532 (0.041)
Black Responder-Black Sender*amount sent	-0.824 (0.032)
Black Responder-White Sender*amount sent	-1.939 (0.000)
White Responder-White Sender*amount sent	2.022 (0.026)
White Responder-Black Sender*amount sent	0.939 (0.113)
Constant	20.647 (0.019)
N	2520
R^2 – overall	0.12
Individual Random Effects	*yes*
Session Fixed Effects	*yes*

*p-values in parentheses.

As we would expect, and consistent with previous studies, the response function is upward sloping. Higher amounts sent yield a higher percentage returned. A sender who sent one token would get 21.4% back, but a sender who sent 10 tokens would get 28.8% returned. The response function of responders, however, is not upward sloping for everyone. Blacks, and especially black women, have a downward sloping response function, so that higher offers get a smaller percentage returned. The response function of all other groups is upward sloping with white men having the steepest slope.

These types of response functions suggest that a money-maximizing sender should, in general, send less to a black responder and more to a white responder. We see that white senders do exactly that. They send less to black responders. Black senders, however, do not significantly

differentiate the amount sent based on the characteristics of the responder. In this sense, black senders are not payoff-maximizing. Either black senders did not anticipate this difference in behavior by white and black responders or there is a slight in-group bias with black senders sending more to black responders.

When we consider the effect of seeing the picture of the sender on the response function, we see an effect on both the intercept and slope. Seeing the picture of one's partner does increase the percentage returned for any offer compared to not seeing the picture, so there does appear to be some gain to senders for having their picture shown (though we did not elicit willingness to pay to have one's picture revealed).

We are also interested in how the slope of the response function changes depending on the pairing. Figure 1 shows a graph of the response functions of different ethnic pairings. (In the key below, the first entry is the responder, and the second the sender – i.e., White-Black is white responder returning money to a black sender). In general, the response functions of black responders are downward sloping and those of whites are upward sloping. For responders paired with a sender of a different ethnicity, however, the slope of the function pivots downward. This means that for higher offers, a white responder paired with a black sender will return a smaller percentage than to a white sender. Also, a black responder paired with a white sender will return a smaller percentage at higher offers than to a black sender. This result is consistent with in-group bias favoring pairings of the same race at higher amounts sent.

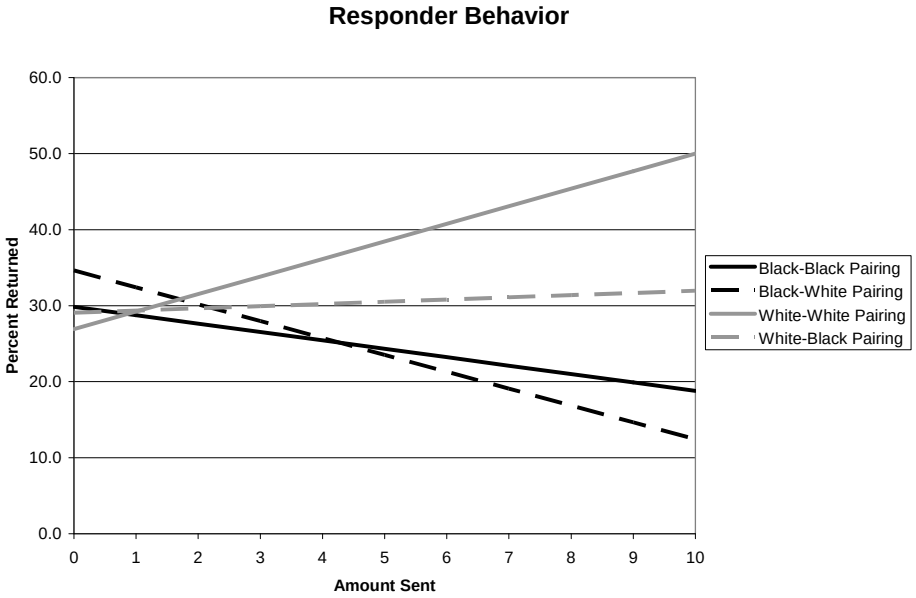

Figure 1: Percent Returned by Ethnicity of Pairing

The results in Table 5 are also robust to other specifications. If we add dummy variables on sex pairings and interactions with amount sent, we get the same results on ethnicity. It appears that it is women, rather than men, who are generating the downward-sloping reaction functions for blacks.

Decision Profits

Did those subjects who bought pictures make more money? Overall, senders and receivers made more money for decisions where a photo was purchased, but the difference is not significant. For senders, profits (earnings from the decision minus the cost of the picture) for decisions when they bought a picture and could see the responder were 7.4% ($0.98) higher than for those decisions where they did not buy a picture. For responders, profits for decisions when they bought a picture and could see the sender were 11.3% ($2.77) higher than for those decisions where they could not see their partner. Fixed-effects regressions of profits on a dummy for having bought the picture for senders and for responders did not yield significantly different results (p-value of 0.147 for responders and 0.292 for senders).

For white senders, however, profits are 38.6% ($5.10) higher compared to those senders who did not buy a picture. This is significant (p-value of 0.041). There is no significant effect for sex, and there is no significant effect for sex or race for responders. It seems that the information in a picture has monetary value, especially to white senders.

Conclusions

In this research, we ask the following questions. What is the information value of a face in decisions where there are returns to trust? And, how does this affect decisions? In addition, we are able to see if subjects should purchase access to a partner's photo by examining differences in behavior and earnings based on knowledge of the counterpart's photo. We use a trust game with the option to purchase the photograph of one's partner to examine these questions. Subjects can purchase a photograph for a fixed price, and if a subject purchases the picture of his partner, the subject sees the picture when making his decision. If a subject does not purchase the picture, then the decision is strictly confidential.

There are four key findings. First, subjects will pay to see the picture of their counterparts, especially for strategic decisions. Both senders and responders are willing to buy pictures, although not everyone buys pictures, even at low prices. Senders have a more inelastic demand for pictures than responders. This seems reasonable since their decision entails more uncertainty than that of a responder. White senders have a higher demand for buying pictures than any other group of senders. This might be due to a minority effect, as the percent of white subjects is smaller than black subjects in all sessions. It is also consistent with unfamiliarity with minority groups and, therefore, uncertainty about the expected behavior of a group of potential partners consisting of members of minority groups.

Second, some senders use ethnicity to differentiate their trust. On average, black senders send less than any other type of sender. However, they do not differentiate the amount sent to black responders or white responders. White senders do differentiate the amount sent. They send more to white responders than to black responders.

Third, responders tend to reward higher amounts sent, though some respond in the opposite way. On average, as has been found in previous research, the percent returned to the sender by the responder increases as the amount sent increases. Black responders, however, return an

increasingly smaller percentage of the tripled amount as the amount sent increases. Indeed, the percent returned of the amount sent of black responders paired with a white sender are the most steeply and negatively sloped. Given these response functions, a money-maximizing sender would do best by sending a black responder less money and a white responder more money. That white senders do differentiate their trust but black senders do not is consistent with an in-group hypothesis and incorrect beliefs on the behavior of responders.

Fourth, buying the picture of one's partner increases profits for senders and receivers, but not significantly. The only group for which buying pictures increase profits significantly is for Whites. They earn 39% more than those who do not buy pictures. Pictures have informational value to Whites and they use it to earn more money.

As shown in previous research, people do take physical cues, such as ethnicity and sex, to differentiate their trust and trustworthiness. Our results show that this information has value in strategic decisions and people are willing to pay for this information. Why might this be the case? If behavior is correlated with ethnicity or sex, then knowing this information can be useful in forming expectations. However, if behavior is uncorrelated with ethnicity or sex, then this information may lead to incorrect expectations and suboptimal decisions. Also, it may perpetuate bad equilibria where groups act a certain way because others expect them to.

That a face has value in strategic decisions has two sides. On the one hand, absent information on performance, being able to see who one is dealing with may increase efficiency as one could infer potential performance from the face. On the other hand, one could make incorrect inferences and perpetuate self-fulfilling expectations. The challenge to researchers is to tease apart how people use the information in a face to formulate decisions.

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